

amended or canceled.

In the outstanding Office Action, Claims 1-90 were rejected under 35 U.S.C. §103(a) as unpatentable over Keshav et al. This rejection is respectfully traversed.

The present invention includes independent Claims 1, 13, 20, 28-30, 32, 34-38, 40, 52, 59, 67-69, 71, 73-77, 79-80, 84-86 and 90.

Independent Claim 1 includes a feature in which an establishing unit establishes a channel in a second physical network to which a transmitting node is connected, and a reserving unit reserves a communication path for transferring data from this channel to another data transfer control device or the receiving node which is connected to the first physical network. Further, a commanding unit commands the transmission to the transmitting node using a protocol depending on the second physical network. In this way, it is possible to perform data transfer to the receiving node even when the transmitting node connected to the second physical network only supports a protocol depending on the second physical network, regardless of the interconnected network environment up to the receiving node (see page 4, lines 23-29).

The outstanding Office Action states Keshav et al disclose the claimed establishment unit in column 10, lines 26-29, the claimed reserve unit in column 10, lines 49-53 and the claimed commanding unit in column 5, lines 58-64.

However, Keshav et al describe in column 10, lines 26-29, a client connection routine to be used by a processing system (such as the application program A 400 in Figure 4) to obtain a virtual circuit with a desired remote connection oriented server program, which may be located on a device linked to the ATM network 300 or the Internet 310. Here, it is unclear as to which network is being identified with the claimed first physical network and which network is being identified with the claimed second physical network.

In addition, Keshav et al describe in column 10, lines 49-55, a part of this client connection routine in which the routine waits for a subsequent message from the connection manager indicating a connection with the requested remote server program has been established. Here, Keshav et al clearly refer to the same connection to the remote server program referred in column 10, lines 26-20. The outstanding Office Action's identification of this disclosure with the claimed reserving unit is therefore contradictory, because the claimed reserving unit clearly refers to a communication path to the first physical network which is quite distinct from the channel in the second physical network established by the claimed establishing unit. In fact, Keshav et al do not teach or suggest any reservation of a communication path. Thus, Keshav et al fails to teach or suggest anything corresponding to the claimed reserving unit.

Further, Keshav et al describe in column 5, lines 58-64, that the application program A 400 communicates with a connection service routines library 405, using either inter-process communication within the processing unit or a connection between two suitably programmed circuits or devices within the processing system. In other words, Keshav et al describe a communication that takes place within a single processing system 100. Here, Keshav et al clearly fail to disclose any commanding of the transmission through the channel established by the establishing unit, because Keshav et al do not refer to a connection in column 10. Moreover, Keshav et al also clearly fails to disclose any commanding to the transmitting node using a protocol depending on the second physical network, as Keshav et al do not refer to any network external to the processing system. Thus, Keshav et al do not teach or suggest the claimed commanding unit.

Accordingly, it is respectfully submitted Claim 1 and the claims depending therefrom (Claims 2-12) are allowable. In addition, Claims 40-51 are method claims corresponding to

Claims 1-12. Therefore, it is respectfully submit Claims 40-51 are allowable for similar reasons.

Regarding independent Claim 13, the outstanding Office Action states Claim 13 is rejected by the same rational as Claim 1.

However, Claim 13 recites features different from Claim 1. Namely, Claim 13 recites a receiving unit which receives a control message containing header information and information regarding a channel. Such a control message is not recited in Claim 1. Claim 13 also recites a commanding unit which commands the receiving node to receive data including the header information or that is transferred through the channel, using a protocol depending on the first physical network. This commanding unit is different from the commanding unit recited in Claim 1, which commands the transmitting node using a protocol depending on the second physical network.

In addition, Claim 1 is directed to data transfer control on the second physical network side, whereas Claim 13 is directed to data transfer control on the first physical network side. According to Claim 13, it is possible to realize data transfer from the transmitting node even when the receiving node connected to the first physical network only supports a protocol depending on the first physical network regardless of the interconnected network environment up to the transmitting node. See page 11, lines 2-8. Keshav et al do not teach or suggest the features recited in Claim 13.

Accordingly, it is respectfully submitted Claim 13 and the claims depending therefrom (Claims 14-19) are allowable. In addition, Claims 52-58 are method claims corresponding to Claims 13-19. Therefore, it is respectfully submitted Claims 52-58 are also allowable.

Regarding independent Claim 20, the outstanding Office Action states Claim 20 is

rejected by the same rational as Claim 4.

However, Claim 20 recites features different from Claim 4. Namely, Claim 20 recites a transfer unit that transfers data transmitted through the reserved communication path to the channel established by the establishing unit, and a commanding unit for commanding the receiving node to receive data transferred through this channel, using a protocol depending on the first physical network. Such a transfer unit and commanding unit are not recited in Claim 4 or its base Claims 1 and 3.

In addition, Claim 20 is directed to data transfer control on the first physical network side, while Claim 4 is directed to data transfer control on the second physical network side. According to Claim 20, it is possible to realize data transfer from the transmitting node even when the receiving node connected to the first physical network only supports a protocol depending on the first physical network (regardless of the interconnected network environment up to the transmitting node). See page 14, lines 20-26. Keshav et al do not teach or suggest the features recited in Claim 20.

Accordingly, it is respectfully submitted Claim 20 and the claims depending therefrom (Claims 21-27) are allowable. In addition, Claims 59-66 are method claims corresponding to Claims 20-27. Therefore, it is respectfully submitted Claims 59-66 are also allowable.

Regarding independent Claim 28, the outstanding Office Action states Claim 28 is rejected by the same rational as Claim 5.

However, Claim 28 recites features different from Claim 5. Namely, Claim 28 recites a second establishing unit for establishing a communication path between the data transfer control device and the first physical network or transmitting node. This feature is not recited in Claim 5 or its base Claims 1 and 3.

Claim 28 also recites a commanding unit for commanding the receiving node to receive data transferred through the channel established by the first establishing unit, using a protocol depending on the second physical network. Note, the receiving node is connected to the second physical network in Claim 28, unlike Claim 1. That is, this feature is not recited in Claim 5 or its base Claims 1 and 3.

Further, Claim 28 recites a conversion unit which converts a data format from a first format depending on the third physical network or the first physical network and/or an upper logical network of the third physical network or the first physical network into a second format depending on the second physical network. In contrast, Claim 5 recites a conversion unit which converts a data format from a first format depending on the second physical network, into a second format depending on the third physical network or the first physical network and/or an upper logical network of the third physical network or the first physical network. In other words, the conversion recited in Claim 28 is the reverse of the conversion recited in Claim 5.

Claim 28 also recites a transfer unit for transferring format converted data to the channel established by the first establishing unit. In contrast, in Claim 5, the format converted data is transmitted to the third physical network or the first physical network through a channel indicated by the control message or after attaching the header information, but not to a channel established by the establishing unit.

Note, Claim 28 is directed to a data transfer control on the second physical network side, in which the second physical network is a network to which the receiving node is connected. On the contrary, Claim 1 is directed to data transfer control on a network to which the transmitting node is connected. According to Claim 28, it is possible to transfer the data in an appropriate format to the receiving node, by performing data transfer to the channel

after the transfer format conversion is performed, even where the transfer format in the communication path on one physical network side is different from the transfer format in the communication path of another physical network or the upper logical network of the another physical network. Accordingly, it is possible for the data transfer control device to absorb the differences between a transfer format, such as MPEG which is depending on the specific link layer technology such as an ATM network or IEEE 1394, and the transfer format depending on the specific logical network, such as MPEG-over-IP. See page 18, line 28 to page 19, line 5. Keshav et al do not teach or suggest the features recited in Claim 28.

Accordingly, it is respectfully submitted Claim 28 is allowable. A similar argument applies to corresponding method Claim 67.

Regarding independent Claim 29, the outstanding Office Action states the claimed second establishing unit is disclosed in column 7, lines 12-17 of Keshav et al.

However, Claim 29 recites features that are not recited in Claim 1. Namely, Claim 29 recites a commanding unit for commanding the receiving node to receive data through the channel established by the first establishing unit, using a protocol depending on the second physical network. Note, the receiving node is connected to the second physical network in Claim 29, unlike Claim 1. As discussed above, commanding to the receiving node is not recited in Claim 1 or disclosed in column 7, lines 12-17 of Keshav et al.

Claim 29 also recites an encoding/decoding unit and a transfer unit for transferring encoded decoded data to the channel established by the first establishing unit, which are not recited in Claim 1 or disclosed in column 7, lines 12-17 of Keshav et al.

Also, note Claim 29 is directed to a data transfer control on the second physical network side, in which the second physical network is a network to which the receiving node is connected. On the contrary, Claim 1 is directed to data transfer control on a network to

which the transmitting node is connected. According to Claim 29, it is possible to transfer data at an appropriate rate or in an appropriate format to the receiving node, by performing data transfer to the channel after the encoding or decoding of the data is performed, even where the available communication resource amount in the communication path on one physical network side is different from the available communication resource amount in the communication path of another physical network or the upper logical network of the another physical network. Thus, it is possible to perform protocol conversion where the transmitting node and the receiving node use different coding schemes (see page 19, line 28 to page 20, line 5). Keshav et al do not teach or suggest these features.

Accordingly, it is respectfully submitted Claim 29, as well as corresponding method Claim 68, are allowable.

Regarding independent Claim 30, the outstanding Office Action states Claim 30 is rejected by the same rational as Claim 1.

However, Claim 30 recites features different from Claim 1. Namely, Claim 30 recites an establishing unit for establishing a communication path using a signaling protocol of a network layer, and a receiving unit for receiving a control message. Claim 30 also recites a commanding unit for commanding the receiving node. These features are not recited in Claim 1.

Note, Claim 30 is directed to data transfer control on the first physical network side, in which the first physical network is a network to which the receiving node is connected. On the contrary, Claim 1 is directed to data transfer control on a network to which the transmitting node is connected. According to Claim 30, even for data input to a dedicated terminal of the network to which the data transfer control device is connected (which can only understand a protocol depending on that network), it is possible to realize data

transmission to the dedicated terminal with respect to data from a transmitting node of an arbitrary physical network in the interconnected environment by commanding data reception from the established channel.

In particular, in the Internet environment, a guarantee of communication quality is made by the signaling protocol of the network layer such as RSVP or ST2. As this is done by the data transfer control device, it is possible to receive the data with the communication quality guaranteed through the Internet environment, even when the data receiving terminal does not have the IP/RSVP/ST2 function (see page 20, line 25 to page 21, line 6). Keshav et al do not teach or suggest the features recited in Claim 30.

In addition, it is respectfully submitted Claim 30 and the claim depending therefrom (Claim 31) is allowable. A similar argument applies for corresponding method Claims 69 and 70.

Regarding independent Claim 32, the outstanding Office Action states Claim 32 is rejected by the same rationale as Claim 1.

However, Claim 32 recites features different from Claim 1. Namely, Claim 32 recites an establishing unit for establishing a communication path using a signaling protocol of a network layer, and a transmission unit for transmitting a control message. These features are not recited in Claim 1.

Note, Claim 32 is directed to data transfer control on the first physical network side, which is a network to which the transmitting node is connected, similarly as in Claim 1. In addition, according to Claim 32, even for data transmission from a dedicated terminal of the network to which the data transfer control device is connected (which can only understand a protocol depending on that network), it is possible to realize data transmission from that dedicated terminal with respect to the data to an arbitrary receiving node of an arbitrary

physical network in the interconnected environment by commanding the data transmission to the established channel. In particular, in the Internet environment, the guarantee of the communication quality is made by the signaling protocol of the network layer such as RSVP or ST2. As this is done by the data transfer control device, it is possible to transfer the data with the communication quality guaranteed through the Internet environment, even when the data transmitting terminal does not have the IP/RSVP/ST2 function (see page 22, lines 5 to 22). Keshav et al do not teach or suggest the features recited in Claim 32.

Accordingly, it is respectfully submitted Claim 32 and the claim depending therefrom (Claim 33) are allowable. A similar argument applies to corresponding method Claims 71 and 72.

Regarding independent Claim 34, the outstanding Office Action states Claim 34 is rejected by the same rational as Claim 29.

However, Claim 34 recites features different from Claim 29. Namely, Claim 32 recites a second establishing unit for establishing a communication path by exchanging a signaling protocol of a network layer, which is different from the second establishing unit of Claim 29. Claim 32 also recites a transmission unit for transmitting a control message, which is not recited in Claim 29. Also note Claim 34 is directed to a relay device, whereas Claim 29 is directed to a data transfer control device. Keshav et al do not teach or suggest the features recited in Claim 34.

Accordingly, it is respectfully submitted Claim 34 is allowable. A similar argument applies to corresponding method Claim 73.

Regarding independent Claim 35, the outstanding Office Action states Claim 35 is rejected by the same rational as Claim 2.

However, Claim 35 recites features different from Claim 2. Namely, Claim 35 recites

a reception unit for receiving a control message. Claim 35 also recites an establishing unit for establishing a communication path by exchanging a signaling protocol of a network layer, which is different from the establishing unit of Claim 1 (which is the base claim of Claim 2). The features discussed above are not recited in Claim 2. Also note Claim 35 is directed to a relay device, which is clearly distinct from a data transfer control device to which Claim 2 is directed. Accordingly, because Keshav et al do not teach or suggest the features discussed above, it is respectfully submitted Claim 35 is allowable, as well as corresponding method Claim 74.

Regarding independent Claim 36, the outstanding Office Action states Claim 36 is rejected by the same rational as Claim 5.

However, Claim 36 recites features different from Claim 5. Namely, Claim 36 recites a receiving unit for receiving a control message, and a transmission unit which converts the data format of the received data according to the control message, which is different from the conversion unit of Claim 5. Also note Claim 36 is directed to a relay device, whereas Claim 5 is directed to a data transfer control device.

In addition, according to Claim 36, it is possible to resolve data transmission impossibility due to the difference in the data format where the receiving node cannot understand the data format of the data transferred up to the relay device such as MPEG-over-IP, by performing the format conversion at the relay device (see page 24, lines 11-19).

Keshav et al do not teach or suggest the features recited in Claim 36. Accordingly, it is respectfully submitted Claim 36 and the corresponding method Claim 75 are allowable.

Regarding independent Claim 37, the outstanding Office Action states Claim 37 is rejected by the same rational as Claim 6.

However, Claim 37 recites features different from Claim 6. Namely, Claim 37 recites

a receiving unit for receiving a control message, and a transmission unit which encodes or decodes the received data according to the control message. This is different from the encoding/decoding unit of Claim 6. Also note Claim 37 is directed to a relay device, whereas Claim 6 is directed to a data transfer control device.

In addition, according to Claim 37, it is possible to resolve the difference where the communication resource used by the data transferred up to the relay device is different from the communication resource permitted at the network of the receiving node side, by performing the encoding/decoding at the relay device. It is also possible to use this mechanism in such a manner that the relay device performs the protocol conversion where the coding scheme of the data transferred up to the relay device is different from the coding scheme of the data that can be understood by the receiving node (see page 24, line 30 to page 25, line 6). Keshav et al do not teach or suggest the features recited in Claim 37.

Accordingly, it is respectfully submitted Claim 37 and the corresponding method Claim 75 are allowable.

Regarding independent Claim 38, the outstanding Office Action states Claim 38 is rejected by the same rationale as Claim 9.

However, Claim 38 recites features different from Claim 9. Namely, Claim 38 recites a collecting unit for collecting attribute information according to a protocol depending on the first physical network. Claim 38 also recites a notifying unit for notifying the attribute information according to a network layer protocol not depending on the first physical network. These features are different from the collecting unit and the notifying unit of Claim 9.

Moreover, Claim 38 is directed to a control device connected to a first physical network, whereas Claim 9 is directed to a data transfer control device connected to a second

physical network.

In addition, according to Claim 38, it is possible to notify attribute information of the information devices connected to the first physical network, independently from a protocol of the physical network, to the device connected with the second physical network, regardless of a type of the second physical network. It is also possible to urge the operations with respect to the information devices from the second physical network (see page 25 , lines 17 to 25).

Keshav et al do not teach or suggest the features recited in Claim 38.

Therefore, it is respectfully submitted Claim 38 and the claim depending therefrom (Claim 39) are allowable. A similar argument applies to corresponding method Claims 77 and 78.

Regarding independent Claim 79, the outstanding Office Action states Claim 79 is rejected by the same rational as Claim 1.

However, Claim 79 recites features different from Claim 1. Namely, Claim 79 recites a control unit for controlling data transfer, and a commanding unit for commanding the receiving node. These features are not recited in Claim 1 as discussed above (e.g., a commanding to the receiving node is not recited in Claim 1).

Also, note Claim 79 is directed to a data transfer control on the first physical network side, in which the first physical network is a network to which the receiving node is connected. On the contrary, Claim 1 is directed to data transfer control on a network to which the transmitting node is connected. According to Claim 79, even where the receiving node connected with the first physical network cannot request transfer of the information data to the transmitting node (e.g., where the receiving node only supports a datalink dependent protocol or where the receiving node has no information transmission function), it is possible to perform data transfer from the transmitting node, regardless of an interconnected network

environment up to the transmitting node (see page 26, line 28 to page 27). Keshav et al fails to teach or suggest the features recited in Claim 79.

Therefore, it is respectfully submitted Claim 79 and the corresponding method Claim 85 are allowable.

Regarding independent Claim 80, the outstanding Office Action states Claim 80 is rejected by the same rational as Claim 2.

However, Claim 80 recites features different from Claim 2. Namely, Claim 80 recites a commanding unit for notifying first and second identification information to a second communication device, and a request unit for requesting a transfer of the data flow to a third communication device. These features are not recited in Claim 2 or its base Claim 1.

Also, note Claim 80 is directed to a communication device connected with a network of broadcast type, whereas Claim 2 is directed to a data transfer control device. According to Claim 80, while the communication device performs procedures for obtaining and maintaining arbitrary information with respect to the Internet, it is possible for the second communication device on the network of broadcast type to receive desired data by having only a simple network layer flow receiving function. In addition, the communication device is capable of transmitting a data flow transfer request on behalf of the second communication device which is a receiving terminal, so that even when the conventionally required information transmission function is omitted from the second communication device, it is still possible to specify transfer of arbitrary data flow to the second communication device through the communication device (see page 27, line 25 to page 28, line 27). Keshav et al fail to teach or suggest the features recited in Claim 80.

Accordingly, it is respectfully submitted Claim 80 and the claims depending therefrom (Claims 81-83) and corresponding method Claims 86-88 are allowable.

Regarding independent Claim 84, the outstanding Office Action states the claimed second receiving unit is disclosed in column 12, lines 54-58 of Keshav et al.

However, the claimed second receiving unit temporarily receives the specified data flow of the network layer, whereas Keshav et al only describe a decapsulation in the case of the encapsulated packet.

In addition, Claim 84 recites a first receiving unit for receiving a notification of a correspondence between a first identification information and a second identification information, which is clearly not disclosed by Keshav et al and which is not recited in Claim 1.

Also note Claim 84 is directed to a communication device connected with a network of broadcast type, whereas Claim 1 is directed to a data transfer control device. According to Claim 84, while this communication device performs procedures for obtaining and maintaining arbitrary information with respect to the Internet, it is possible for the communication device on the network of broadcast type to receive desired data by having only a simple network layer flow receiving function (see page 30, line 11 to page 31, line 4). Keshav et al do not teach or suggest the features recited in Claim 84. Therefore, it is respectfully submitted Claim 84 and the corresponding method Claim 90 are allowable.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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